

## **Stardust**

### **SCRIPT:**

Science can be stranger than fiction. All your atoms, those little building blocks we're all made of, are really little bits of stardust. Your face, your hands, your legs – all of you was once part of an ancient star. As strange as it seems, that's the conclusion of the world's leading astronomers, and NASA, our own space agency.

Here's what they say:

Back when the universe was young, there wasn't anything solid anywhere, just a bunch of lightweight gas, like hydrogen and helium. The very first stars were kind of like the big ovens that cooked the gas, and turned it into the heavier elements we're all made of today, things like carbon, oxygen, and even iron. Now, my first question, and maybe yours too, is how did that stuff get from those old stars, where it was made, to here, where it's part of us? Scientists say that's a good question, but there is an answer. Astronomers say the old stars didn't die quietly. They exploded, and all that stardust, our ingredients, scattered out into space. Eventually, some of it drifted over to our corner of the Universe. They say some of it was used to form the Sun, the Earth and the other planets. And exactly the same stuff is what we're made of today – carbon, iron and other elements, borrowed from another time.

Hard to believe, but true – stardust is the scientific explanation of what we're made of.

### **Relevant NSES Standards**

NSES Content Standard A: Understandings about scientific inquiry.

(Grades K-8) Science is used to describe/explain objects and events.

(Grades 9-12) Conceptual principles guide scientific inquiry.

NSES Content Standard B: Physical science.

(Grades K-4) Objects are composed of materials (star dust as a material).

(Grades 5-8) Materials are made of elements.

(Grades 9-12) Heavier elements are essential constituents of life.

NSES Content Standard C: Life science.

(Grades K-8) Environments necessary to sustain life (depend on constituents derived from star dust).

NSES Content Standard D: Earth and space science.

(Grades K-4) Objects in the sky. Stars./Properties of earth materials.

(Grades 9-12) Origin and evolution of the universe.

NSES Content Standard E: Understanding about science and technology.

(Grades K-8) Using science to understand the natural world.

(Grades 9-12) Scientific inquiry is driven by desire to understand the natural world.

NSES Content Standard F: Science in social perspectives.

(Grades K-4) Science influences how we see the world.

(Grades 5-12) Science influences the way we see ourselves.

**Credits:** Dr. Andrew Fruchter, Hubble Space Telescope; Dr. Barry Geldzahler, NASA

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